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|--|-------------|----------------------|---------------------------|------------------|
| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO.       | CONFIRMATION NO. |
| 10/774,419   | 02/10/2004  | Toshichika Takei     | 248795US2                 | 9960             |
| 22850 7590 02/27/2007<br>OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.<br>1940 DUKE STREET<br>ALEXANDRIA, VA 22314 |             |                      | EXAMINER<br>LUU, CHUONG A |                  |
|  |             |                      | ART UNIT                  | PAPER NUMBER     |
|  |             |                      | 2818                      |                  |
| SHORTENED STATUTORY PERIOD OF RESPONSE   |             | NOTIFICATION DATE    | DELIVERY MODE             |                  |
| 3 MONTHS   |             | 02/27/2007           | ELECTRONIC                |                  |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Notice of this Office communication was sent electronically on the above-indicated "Notification Date" and has a shortened statutory period for reply of 3 MONTHS from 02/27/2007.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentdocket@oblon.com  
oblonpat@oblon.com  
jgardner@oblon.com

**Office Action Summary**

Application No.

10/774,419

Applicant(s)

TAKEI ET AL.

Examiner

Chuong A. Luu

Art Unit

2818

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 31 January 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,3-10,12 and 15-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-10,12 and 15-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

**REQUEST FOR CONTINUED EXAMINATION (RCE)**

The request filed on January 31, 2007 for a Request For Continued Examination (RCE) under 37 CFR 1.53(d) based on parent Application No. 10/774419 is acceptable and a RCE has been established. An action on the RCE follows.

**DETAILED ACTION**

**REJECTION NOT BASED UPON PRIOR ARTS.**

**Statutory Basis**

***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 17 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The newly amended limitation "...a heater, different than the heating means,..." is not supported in the specification.

**PRIOR ART REJECTIONS**

**Statutory Basis**

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

**The Rejections**

Claims 1, 8-10 and 15-18 are rejected under 35 U.S.C. 102(e) as being anticipated by Kawano et al. (U.S. 6,881,058).

Kawano discloses a heating apparatus with

(1); (7) a heating plate (202) for heating the mask substrate (W) disposed on a first side of the heating plate (202) having a front surface and a side surface (see Figure 2);

heating means (203) for heating the heating plate (202) (see column 6, lines 22-27);

a frame member (205) disposed on the first side of the heating plate (202) so as to overlap the heating means (203) as viewed from the first side, having an inner peripheral surface and a first clearance between the inner peripheral surface and the side surface, being detachably disposed to the heating plate so that the frame member (205) is disposed around (see Figure 2);

(8) further comprising: means for detecting a temperature of the mask substrate; a controlling portion for controlling the driving mechanism in accordance with the detected temperature (see Figure 2);

(9) wherein the controlling portion determines whether of the mask substrate is in a the temperature increasing state or in a constant state in accordance with the detected temperature, controls the driving mechanism so that the distance between the frame member and the side surface of the mask substrate placed on the heating plate becomes a first distance when the wherein the controlling portion temperature of the mask substrate is in the increasing state and a second distance smaller than the first distance when the temperature of the mask substrate is in the constant state (see Figure 2);

(10) wherein the frame member is divided along with the side surface in a peripheral direction of the mask substrate placed on the heating plate (see Figure 2);

(15) further comprising a supporting portion for movably supporting the frame member so that a second clearance is formed between the frame member and the heating plate (see Figure 2);

(16) wherein the frame member and the supporting portion comprise material having a heat conductivity (see Figure 2).

(17) further comprising a heater, different than the heating means, disposed in the frame member (see Figure 2);

(16) further comprising a clearance between the frame member and the first side of the heating plate (see Figure 2).

## **PRIOR ART REJECTIONS**

### **Statutory Basis**

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

### **The Rejections**

Claims 3-6 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawano et al. (U.S. 6,881,058) in view of Fukunaga et al. (U.S. 6,743,395).

Kawano teaches everything above except for wherein the inner peripheral surface is curved in a different shapes such as concave, convex, a mirror surface and a rough surface; heating a semiconductor wafer having a diameter of 10 inches. However, Fukunaga discloses an apparatus with the inner peripheral surface is curved in a different shapes (see column 18, lines 55-64; column 20, lines 35-40; column 27, lines 10-11). Even Kawano and Fukunaga do not explicitly disclose a semiconductor wafer having a diameter of 10 inches. However, a semiconductor wafer having a diameter of 10 inches is considered to be obvious. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the teaching of Kawano (accordance with the teaching of Fukunaga) since it has been held that where the general conditions of a claim are disclosed in the prior art,

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discovering the optimum or workable ranges involves only routine skill in the art and it is noted that the applicant does not disclose criticality in the ranges claimed. In re Aller, 105 USPQ 233 (see MPEP 2144.05). Doing so would facilitate the manufacture of the semiconductor device and increase the heating of the semiconductor wafer.

**Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chuong A. Luu whose telephone number is (571) 272-1902. The examiner can normally be reached on M-F (6:15-2:45).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Smith can be reached on (571) 272-1907. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Chuong Anh Luu  
Patent Examiner  
October 27, 2006

FIG. 38

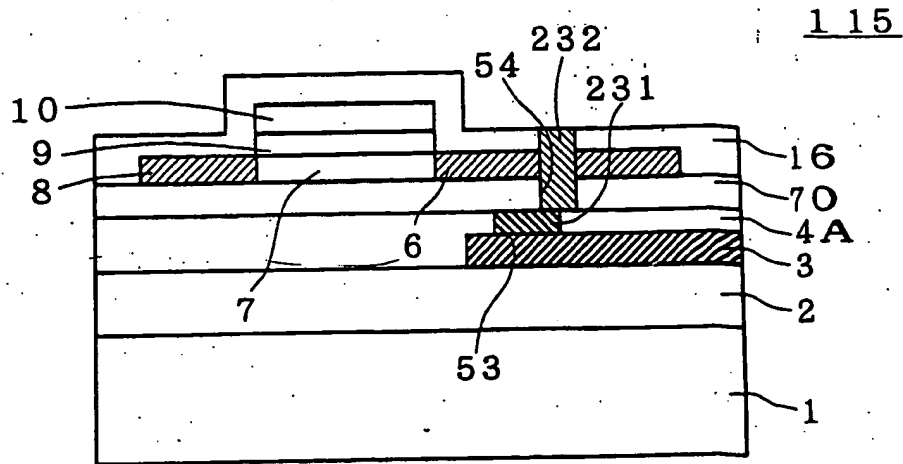


FIG. 39

